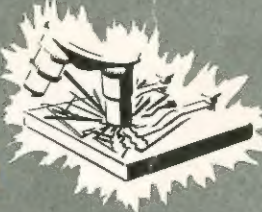


Publications

359/360

350
87

350
307



DOES THIS
HAPPEN IN
YOUR CLASSES?

IT CAN'T HAPPEN HERE

with the
**SPENCER
SCHOLAR'S
MICROSCOPE**




the microscope YOU encouraged us to design

359/360

359/360

SPENCER SCHOLAR'S MICROSCOPE

—the Microscope **YOU** Encouraged us to Design



Before starting the design of an ideal teaching microscope, American Optical Company representatives visited science teachers to ask what features they needed. The answers were numerous, enthusiastic and constructive . . . a teaching microscope should have a built-in light source with which students can easily obtain correct illumination . . . it should have easily recognizable objectives and diaphragm settings . . . it should permit comfortable postures—it should have simplified focusing control . . . it should be sturdy, tamperproof, and hard to take apart . . . it should be low priced for educational budgets.

Thanks to your suggestions we have departed from the conventional in order to create a

microscope specifically for science teaching. The Scholar's Microscope is radically different in appearance and convenience . . . but it does *not* differ from the other, more advanced Spencer Microscopes in *quality*. The first time you operate it, you will immediately recognize the standard Spencer optics and the attention devoted to mechanical precision. In fact, the simpler, more dependable illuminant is in constant adjustment. This makes it easier to obtain better and more efficient optical results.

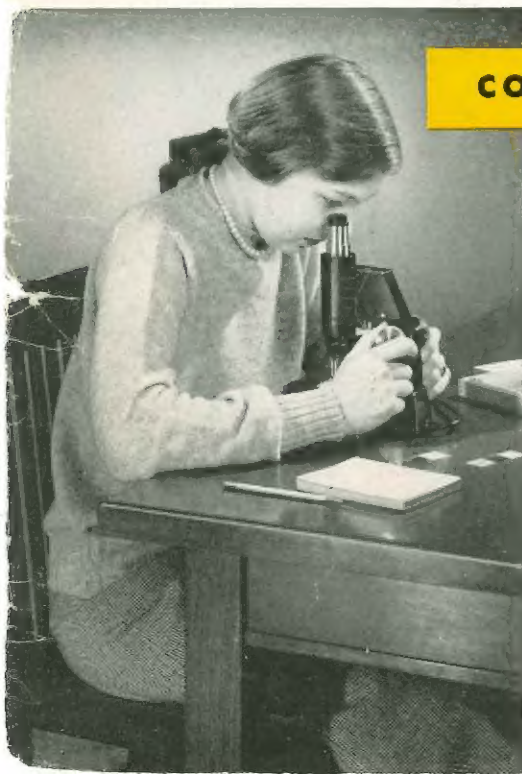
Before introducing the Spencer Scholar's Microscope it was thoroughly tested for many months under actual operating conditions. Truly, the "Microscope You Encouraged us to Design" is the answer to science teaching needs.

COMFORTABLE OPERATION

◀ **THIS** Low overall height permits correct, comfortable posture. Reverse arm and nosepiece (as on expensive research microscopes) give clear view of stage. Focusing control is placed low and away from the body, permitting forearm to rest on table. Slide, objective, and diaphragm markings are in full view.

NOT THIS ▶

The average student must strain to see into eyepiece of standard microscope. Microscope body crowds the observer and hides the stage. Focusing controls are so close to the body that arm position is uncomfortable.



Overall height over 2 inches lower than standard microscope . . . for comfortable observation without stretching or straining.

Full view of stage and objectives . . . from comfortable operating position.

Unit construction . . . easy to carry . . . easy to clean. Instrument may be lifted by any part. All optical parts locked in except on Series 79.

Improved dual-cone nosepiece . . . hard wearing positive ball pin and leaf spring stop.

Standard quality Spencer Trade-Marked objectives . . . color bands indicate power. Clear, sharp definition.

Built-in illumination . . . always in constant adjustment . . . low cost standard bulb easily replaced . . . positive diaphragm control.

10X eyepiece built-in (except Series 79)

Metal dovetail slide . . . of highest precision to assure accuracy. Metal bearing surfaces for many years of use.

Safety stop . . . to prevent nosepiece from hitting microscope arm.

Single focusing adjustment . . . no more fumbling with two adjustment controls . . . no more broken slides . . . no backlash.

Handy out-of-the-way switch

Large stage . . . ample working area . . . acid resistant.

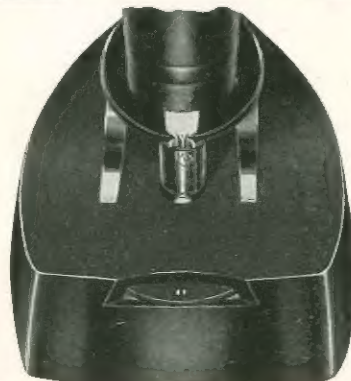
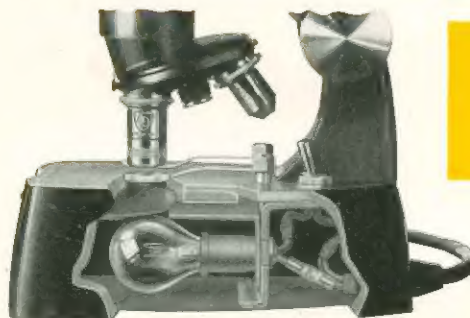


SIMPLE, EFFICIENT ILLUMINATION

Each student is assured an equal opportunity. Illuminator, built into base, is dependable and in constant adjustment. It eliminates the variables found in the use of daylight. The microscope may be moved from one observer to another without disturbing illumination or other adjustments.

The 10 watt bulb is low priced, easy to obtain, easy to replace. Positioned close to the specimen, it provides a wider angle of illumination than is possible with only a substage mirror. The result—better optical performance.

The long wearing, simple to operate, disc-type diaphragm has illuminated numerals to identify the 5 diaphragm apertures. Guess work is eliminated. Correctly controlled illumination is easily achieved by any student.



SINGLE FOCUSING ADJUSTMENT



Slower in movement than conventional rack and pinion devices, this unique focusing mechanism provides a sufficiently fine adjustment to focus critically and rapidly. Fumbling with two adjustments is eliminated.

Spring loading of the gear train automatically compensates for wear and eliminates backlash, at the same time acting as a safety device making it impossible to break slides by racking objectives through them.

The focusing control can be immediately adjusted to individual preference by turning one control knob against the other.

SPENCER SCHOLAR'S MICROSCOPE

For elementary use, Optical equipment provides magnifications of 42X and 100X.

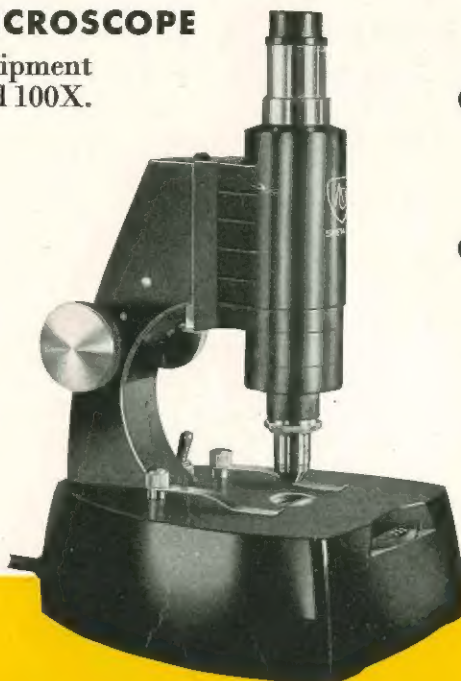
Equipment includes:

Nosepiece—Single

Objective—Cat. No. 110 10X
Achromatic, separable to 4.2X

Eyepiece—10X Huyghenian, built-in or removable

Illumination—Built-in, 10 watt bulb.



Catalog No. 78A with built-in eyepiece, locked-in objective and stage clips, and dust cover . . \$61.50

Catalog No. 79A with removable eyepiece and objective, locked-in stage clips, and dust cover \$63.00

SPENCER SCHOLAR'S MICROSCOPE

The Standard Instrument

For high schools and many college classes. Optical equipment provides magnifications of 100X and 430X.

Equipment includes:

Nosepiece—Double

Objectives—Cat. No. 109 10X
Achromatic, Cat. No. 115 43X
Achromatic

Eyepiece—10X Huyghenian, built-in or removable

Illumination—Built-in, 10 watt bulb.



Select the N

for fool-proof
including built-in
locked-in objective

Select the N

for flexibility when
pieces or intercha
jectives is desired

Catalog No. 78B with built-in eyepiece, locked-in objectives and stage clips, and dust cover \$99.50

Catalog No. 79B with removable eyepiece and objectives, locked-in stage clips, and dust cover \$101.00

SPENCER SCHOLAR'S MICROSCOPE

For advanced college studies where versatility is essential. Optical equipment provides magnifications of 25X, 50X, 100X, 215X and 430X.

Equipment includes:

Nosepiece—triple

Objectives—

Cat. No. 107 5X Achromatic

Cat. No. 109 10X Achromatic

Cat. No. 115 43X Achromatic

Eyepieces—5X Huyghenian (removable), 10X Huyghenian (removable)

Illumination—Built-in 10 watt bulb.



Catalog No. 79DA with removable eyepieces and objectives, locked-in stage clips, and dust cover \$127.50

No. 78 Series

unit construction
eyepiece and
stage clips.

No. 79 Series

additional eye-
piece and stage clips.



SPENCER SCHOLAR'S MICROSCOPE

For advanced students and college biology classes. Optical equipment provides magnifications of 50X, 100X and 430X.

Equipment includes:

Nosepiece—Triple

Objectives—

Cat. No. 107 5X Achromatic

Cat. No. 109 10X Achromatic

Cat. No. 115 43X Achromatic

Eyepiece—10X Huyghenian, built-in or removable

Illumination—Built-in 10 watt bulb

Catalog No. 78BA with built-in eyepiece, locked-in objectives and stage clips, and dust cover \$120.50








Catalog No. 79BA with removable eyepiece and objectives, locked-in stage clips, and dust cover \$122.00

ACCESSORIES

for Spencer Scholar's Microscope

ACHROMATIC OBJECTIVES

For use with Series 78 and 79 stands.

	Catalog Number	Magnification	Numerical Aperture	Working Distance in mm	Price
	105	3.5X	0.09	25.0	\$18.00
	106	3.5X	0.08	3.8	18.00
	107	5X	0.14	16.0	18.00
	109	10X	0.25	7.0	18.00
	110*	10X and 4.2X	0.25 and 0.10	7.0 and 27.0	18.00
	112	20X	0.50	1.4	26.00
	115	43X	0.66	.7	29.00

*Separable objective, screw mount.

HUYGHENIAN EYEPIECES. For use with Series 79 stands only.

Catalog Number	Magnification	Price
133	5X	\$5.50
142	10X	5.50



Objectives, other than those listed with the standard models, may be selected from this chart. Please note when ordering that Series 78 objectives unless otherwise specified will be locked in and cannot be interchanged.

CARRYING CASE

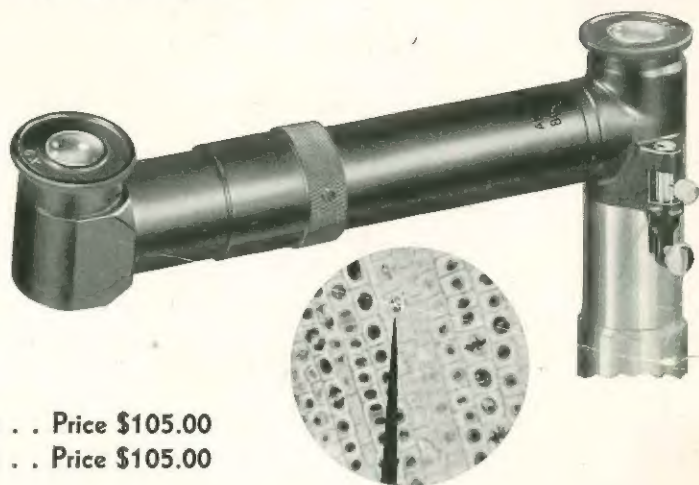
Sturdy grey leatherette covered carrying case holds microscope in vertical position. Lined with maroon felt, the microscope is well blocked and protected from possible damage in transit. Positive draw bolt prevents accidental opening of lid. Four clips fastened to inside of lid, provides carrying space for objectives and eyepieces Price \$9.00

REPLACEMENT BULB

Catalog No. 386 10 watt, 115 volt bulb, filament C-7A, type S-11 candelabra base, (Mazda No. 10S11/79) . . MCP \$.25

DEMONSTRATION EYEPIECE

This eyepiece (for Series 79 only) allows two persons to view the same field at the same time. A pointer visible in both eyepieces enables the instructor to indicate specific details in any part of the field. The auxiliary eyepiece focuses independently of the microscope eyepiece and is mounted on a horizontal extension arm. It revolves around this axis and may be inclined to angle convenient to the user.



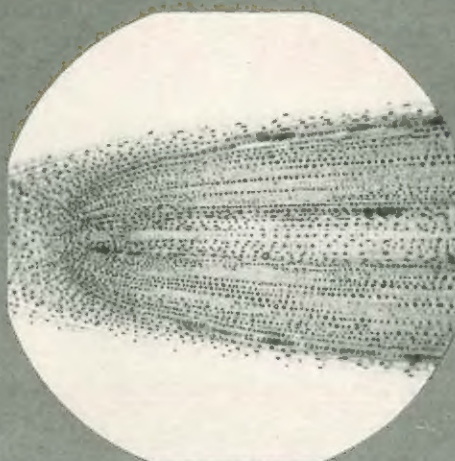
Catalog No. 432 Demonstration Eyepiece with 6X eyepiece . . Price \$105.00

Catalog No. 434 Demonstration Eyepiece with 8X eyepiece . . Price \$105.00

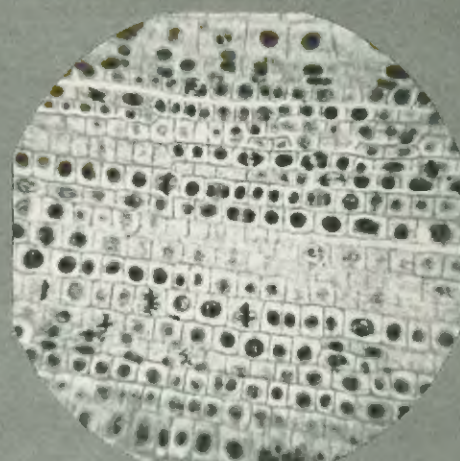
All prices, deliveries, and terms of sale are subject to change without notice. Orders are subject to final acceptance by the Sales Office at Buffalo, N. Y., at prices prevailing at the time of shipment. Federal, State, City, or other taxes imposed on the sale, lease, or other transfer, use, or consumption of any article listed herein are to be added to the prices quoted.



Onion Tip, 5X objective



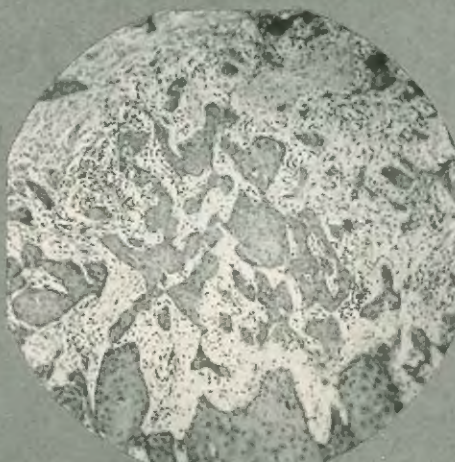
Onion Tip, 10X objective



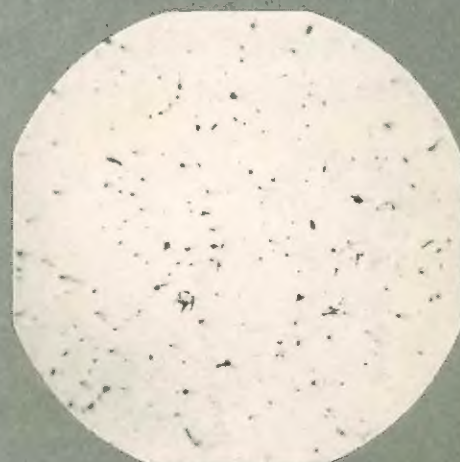
Onion Tip, 43X objective



Mosquito, 5X objective



Cancer Cells, 10X objective



E. Typhosa, 43X objective

The photomicrographs shown above were taken through a production model Spencer Scholar's Microscope using a 10X built-in eyepiece and objectives as indicated. Photomicrographs reproduced through the courtesy of Mr. A. C. Lonert of Chicago.

SPENCER SCHOLAR'S MICROSCOPES

Series 78-79

American Optical Company

Scientific Instrument Division

Buffalo 15, New York



BRANCH OFFICES: NEW YORK, CHICAGO,
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